Reporting Federal Activities and Matters of National Concern . . .

HIGHER EDUCATION

September 1963

Federal Participation in Higher Education

JOHN E. FOGARTY

Higher Education for Women

ELEANOR F. DOLAN

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE—Office of Education

CONTENTS

Page

FEATURES

Federal Participation in the Quest for Excellence in Higher Education, *John E. Fogarty* 3

Higher Education for Women: Time for Reappraisal, *Eleanor F. Dolan* 5

OFFICE OF EDUCATION STUDIES AND SURVEYS

The Academic Fields of Graduate Deans 14

Studies and Surveys in Progress 15

Patterns of Administration 17

INTERNATIONAL EDUCATION

Agency for International Development 17

Alliance for Progress 18

In the Office of Education 18

OE PROGRAM NOTES

Project English 19

National Defense Education Act 19

Prediction in Education 22

OTHER PROGRAM NOTES

Educational Television 22

National Science Foundation 23

Public Health Service 24

Atomic Energy Commission 24

Spirit of a Free Society 24

Status of Women 25

Teaching Opportunities in Australia 25

NEW PUBLICATIONS 27

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

HIGHER EDUCATION

Vol. XX, No. 1

Reporting Federal activities and matters of national concern in higher education

Published nine times a year. Printing approved, Bureau of the Budget, August 30, 1960.

Subscription: In advance, $1.25 a year (single copy, 20 cents), to foreign countries, $1.75. For orders of 100 copies or more in bulk to one address in the United States, 25 percent discount is allowed. Send remittance to Superintendent of Documents, Government Printing Office, Washington, D.C. 20402

EDITORIAL COMMITTEE

Chester L. Neudling, *Chairman*

Henry S. Brunner — R. Orin Cornett

John H. Russel — K. W. Mildenberger

ANTHONY J. CELEBREZZE

Secretary of Health, Education, and Welfare

FRANCIS KEPPEL

Commissioner of Education

R. ORIN CORNETT, *Acting*

Assistant Commissioner for Higher Education

Federal Participation in the Quest For Excellence in Higher Education

By JOHN E. FOGARTY*

I WELCOME this opportunity to meet with you today to share some of our thoughts concerning the great importance of the very positive relationship which has developed between the Federal Government and the colleges and universities of the Nation in the area of sponsored research. I should also like to mention at this point that this working relationship has become a tripartite one, for a growing number of organizations such as the American Council on Education are helping to insure that the relationship shall continue as a healthy one for both the Federal Government and the institutions of higher education. Our hope in the Congress is that these relationships will continue and prosper, for a close partnership between government and education is important in our kind of society.

It is often assumed that governmental interest in sponsored research was born with Sputnik. Actually, our interest in the research endeavor of institutions of higher education has a long and rewarding tradition. Historically, the government has shown a continuous interest in research and education, and the Congress has long encouraged both scientific research and educational enterprises. The creation of the Smithsonian Institution in 1846, the passage of the Morrill Act establishing the land-grant colleges in 1862, the founding of the National Academy of Sciences in 1863 and the United States Office of Education in 1867 all give evidence that this interest existed early in our Nation's history. In recent years there has been much new evidence of the continued interest: In 1938, the National Institutes of Health; in 1946, the Office of Naval Research; in 1958, the National Defense Education Act with its several research titles; in 1950, the National Science Foundation; and in 1956, the Cooperative Research Program of the United States Office of Education.

The growth of Federal interest in the research endeavor of the college and university has, of course, been most spectacular since the second World War. Evidence of this growth can be seen in the increasing diversification in the types of university research in which the Government is interested and in the greater degree of Federal funding for such research projects. Perhaps a short description of the amount of money involved would be helpful at this point.

In the decade 1951 to 1961, a total of $80 billion was expended by all sectors of the economy on research and development. During these years the Government assumed an ever-increasing proportion of the total expenditures: In the first year of this decade, the Federal share of the cost was about one half of the total; but by 1961, it had risen to over two-thirds where it remains today. In dollar figures, this represents a total Federal budgetary obligation of $12.4 billion for all research and development activity in fiscal year 1963. Present projections indicate that the proportion of all research and development costs borne by the national government will probably rise to three-fourths by fiscal year 1970. What happens after that is largely a matter of the

---

*As Chairman of the House subcommittee providing funds for the Departments of Labor and Health, Education and Welfare, Mr. Fogarty has become nationally known as the spokesman for medical research in the Congress. He has been awarded distinguished service citations by many national health organizations, veterans groups, educational associations and business chambers, and has received 13 honorary degrees.

Mr. Fogarty has served in the U.S. House of Representatives for 22 years; he represents the 2d Congressional District of Rhode Island.

This article is adapted from a speech delivered by Mr. Fogarty on June 20, 1963, at a conference on Federal programs for colleges and universities, sponsored by the American Council on Education in Washington, D.C.

political orientation of the person who draws up the forecast. But I am sure that both Democrats and Republicans will agree that the Federal Government will probably continue as the dominant source of support for research and development. Let me narrow the focus a little more and indicate what proportion of these research and development funds have gone to colleges and universities for basic research.

The National Science Foundation estimates that the total Federal expenditures for basic research in fiscal year 1961 was about $969 million (this total excludes Federal funds for developmental and purely applied research and for Government-sponsored research centers administered by universities). Of this total, 25 percent was expended on intramural research; of the remaining three-fourths, which was $727 million, about $400 million was awarded in grants or contracts to educational institutions for research. The significance of research as a source of Federal support in the institutions of higher education is indicated by the distribution of the approximately $1 billion expended in such institutions by the Government in 1960: about $450 million went for research, $488 million for scholarships and fellowships, $17 million for various programs of instruction, and $44 million for facilities.

An important trend in the post-World War II period has been the growing number of Federal agencies contributing research funds to institutions of higher education. In fiscal year 1961, for example, seven principal sponsors contributed most of the Federal money that went to colleges and universities for research: The Department of Defense (about 40 percent), the Public Health Service (about 30 percent), the National Science Foundation (about 11 percent), the Atomic Energy Commission (about 8 percent), Department of Agriculture (about 6 percent), the National Aeronautics and Space Administration (about 3 percent), and the Office of Education (about 2 percent). While there is still a heavy concentration in the sciences, funds for research in the social sciences and the arts and humanities are beginning to grow—although not as fast as we might prefer.

NOW, while this historical and financial account of the growth of the Federal concern for research in institutions of higher education is important to establish the dimensions and character of the program, it is not the full story. Like all historical facts and statistical figures, the facts I have mentioned must be considered within the context of the social and intellectual environment within which they have developed. What *has* been the effect of this impressive outlay on our educational system?

While it is natural to assume that most colleges and universities would be eager to obtain as much Federal support as possible, you are aware, I am sure, that some criticism has been leveled at the involvement of the Federal Government in the research in institutions of higher education.

Some persons, including the presidents of some of our major universities, have indicated a growing uneasiness at the continuing participation of members of the faculty in Government-sponsored research. Their expressed fears, held very honestly, are that this research siphons faculty members from teaching and has a weakening effect on the university. A second fear expressed by many persons is that growing Federal involvement in university research programs must of necessity mean growing Federal control of the research and eventually of the universities themselves. Finally, there is the frequently heard charge that the Federal Government's interest is of necessity a selfish one and that consequently support goes primarily to applied rather than basic research and even here primarily to the sciences, medicine, and agriculture. As I have said, these charges against the Federal research programs in institutions of higher education are honestly made. I must, however, say that I do not agree with the charges nor share the concern of those who made them.

My experience in working with the principal grant programs of the Federal Government has been that while the concern is a real one, and must constantly be considered, most administrators of the programs have worked very carefully and very diligently with us to insure that these difficulties do not arise. While there is not time to take up in detail answers to each of these criticisms, let me illustrate in a very general way how the Administration and the Congress have attempted to forestall such problems in two specific programs—the grant programs of the National Institutes of Health and

Continued on p. 25

Higher Education for Women: Time for Reappraisal

By ELEANOR F. DOLAN*

AMERICAN WOMEN are convinced that to reach their goals, the goals of all Americans, they must become educated. And they are acting on their convictions: they are going to college in ever increasing numbers. In the past 5 years the enrollment of women in colleges and universities has increased by about 51 percent,[1] the enrollment of men by only 30 percent. The increase has shown itself not only among young women entering college for the first time but among talented mature women who have returned to college after being out for several years.

In the same 5-year period the total *first-time* enrollment of women increased by 54 percent, while that of men increased 35 percent.[2] First-time enrollment of women in degree-credit courses in the fall of 1962 represented 44.1 percent of the girl high school graduates of the previous June in contrast to 36.4 percent for 1957.[3]

This important trend has been obscured because, even with the increase, women's total enrollment has not yet regained the 40:60 ratio to men's which it held in 1939,[4] and the dropout rate among women by the end of the second college year is very high indeed, averaging 46.1 percent as compared with 39.6 percent among men (based on the class of 1950).[5]

In the fall of 1961, 23.2 percent of all American women between 18 and 19 years of age were enrolled for the first time for degrees; as compared to 20.1 percent in 1957.[6] If this trend continues—and there is ample evidence that it will—by 1980 the total number of women in college may well equal that of men.[7]

This amazing development has come about in the comparatively short period of 125 years since women first began to enjoy the privilege of official residence in the established house of higher education. But there has been little public realization of the development, and even less fundamental reassessment of the measures needed to meet its implications and consequences. What has brought about the change? Are the colleges and universities meeting the needs of these women? Do we know what their needs are? What more would be desirable for them?

CAUSES OF THIS DEVELOPMENT

The development has come about through the interaction of a number of forces in American life. The strongest of these has been the fact that for man or woman, married or single, this Nation has placed its top life value on productive activities. But in modern times economic, technological, and political changes have decreased the job satisfaction of the housewife. Simultaneously, these same forces have conspired to permit and encourage many women to find their prime goals in work outside the home.

In the search for their goals and in the success with which they have achieved them, education has been at once both tool and inspiration. It was education that taught women to want to attain these goals. For women of academic ability, higher education with freedom to choose their specialization has become all-important. It has so reversed the situation since the beginning of the century that

---

*Dr. Dolan has been an associate in higher education with the American Association of University Women since 1950. She has taught political science and government at State College for Women, Tallahassee, Florida, at New York University, and at Flora Stone Mather College, Western Reserve University. She holds the B.A. degree from Wellesley College and the A.M. and Ph.D. degrees from Radcliffe College.

[1] U.S. Department of Health, Education, and Welfare, Office of Education, *Opening (Fall) Enrollment in Higher Education, 1962: Institutional Data*, table 1, p. 2.

[2] *Ibid.*

[3] *Ibid.* and U.S. Department of Labor. Women's Bureau, unpublished data.

[4] U.S. Department of Health, Education and Welfare, Office of Education, *Opening (Fall) Enrollment in Higher Education, 1960: Analytic Report*, table 9, p. 15.

[5] ———, *Retention and Withdrawal of College Students*, p. 17.

[6] U.S. Department of Commerce, Bureau of the Census, "Current Population Reports; School Enrollment: October 1957 and October 1961", table 2, page 8 and 7, and table 5, pp. 11 and 9.

[7] The date 1980 is approximate. It was arrived at by using the present rate of change for the period 1957 to 1962, 29.931 percent for men and 50.574 percent for women, and calculating the total enrollments for 5-year periods on the assumption that the present rate of change would remain constant.

the talented woman now finds herself being sought for the labor force; America's "first" goal is hers. National manpower needs have played their part in this reversal. The need for the highly skilled is now so acute that the objections to women's employment outside the home have all but disappeared. Society now approves such employment, if the woman needs or wants it, even a woman with children, provided the children's needs are properly met.

IS HIGHER EDUCATION MEETING WOMEN'S NEEDS?

Ever since U.S. colleges and universities opened their doors to women, controversy has raged around the nature of the education they most needed. On the one side it has been argued that women should "take what is already offered"; on the other, that "a special program should be developed centered on their major function, the family." Through both have run strong words about "liberal education" and "vocational training." These divisions of opinion persist, as do the practices based on them; with them or despite them, intelligent women have benefited and continue to benefit from their college experience. But the question now is, "What better can be done?" In answer, many of us would say that education should not be concerned primarily with the past nor with past theories; it must be concerned with the demands of the approaching 21st century, with the preparation of able women to meet the future with reasonable confidence and considerable wisdom.

What women show they want from higher education

How can "something even better" be devised? For this assessment, observation and supporting research are the first resource. Women themselves, by their actions and their attitudes, make evident the demands made on them by an increasingly urban civilization. They have already made obvious, as the statistics cited earlier show, one fact of prime significance: they are determined to go to college. Many interrupt their college work principally for marriage, although it is maintained that in recent years more who enter college finish.[8] Of those who go straight ahead to earn the bachelor's degree, 70 percent marry within 3 or 4 years.[9] Contrast this with, for example, the Vassar College class of 1904, 38 percent of whom never married.[10] Of those who do not marry, from 81 to 87 percent remain in the labor force until retirement.[11]

Before marriage and after, usually until the first child is born, these modern girls are at work. In 1959, for example, 70 percent of the women 18 to 24 years of age, married or single, with four or more years of college education were in the labor force.[12]

After their children arrive, college women generally feel that they must center their activities in the home for a while. They say, and research confirms their statement, that this period is much shorter than it used to be. If it is estimated that the home period ends when the youngest child is in elementary school at age 6, then today it is about 5 years less than at the turn of the century (10 years in 1959 versus 14.5 in 1890).[13]

This means that women are, on the average, free to return to the work force in their early thirties with more than half their lives before them. And they are returning, college women[14] more rapidly than other women. In 1962, 48.2 percent of the college women 25 years old and over were working outside the home in contrast to 41 percent in 1950.[15] Comparable figures for women *without regard to educational attainment* are 33 percent in 1962 and 21 percent in 1950.[16] Furthermore, even the older college women are returning to work. For example, in 1959, 46 percent of college women 35 and over, married and living with their husbands, were in the work force. The recent increase in mature women workers is said to be *the* revolutionary change taking place in the labor force; and among these, the major increase is among college women.[17]

O the average, college women are dissatified with the occupations open to them on their return to

---

[8] *Women's Education*, "An Optimistic Curve?", June 1962, p. 1.

[9] Mervin B. Freedman, "Studies of College Alumni," in *The American College*, p. 870.

[10] Nevitt Sanford, "Today's College Students Look at Themselves, their Society and their Profession," in *National Commission on Teacher Education and Professional Standards, Official Report 1962*, p. 68.

[11] U.S. Department of Labor, Women's Bureau, "Information Relating to College Women," January 1963, table 2, p. 1.

[12] ———, Unpublished data.

[13] U.S. Department of Commerce, Bureau of the Census, Paul C. Glick, unpublished data.

[14] For the purposes of this paper, the college woman is defined as having completed four or more years of higher education.

[15] Figures for 1962: Denis F. Johnston, "Educational Attainment of Workers, 1962," *Monthly Labor Review*, May 1963. Figures for 1950: Eleanor F. Dolan, "Educational Goals for College Women," *Association of American Colleges Bulletin*, October 1953.

[16] *Ibid.*

[17] Johnston. op. cit.

work. Typically, their absence has covered several years and they are also educationally rusty. Since they generally remain in the labor force until retirement, the occupation is important. All too often the jobs open to them are not commensurate with their intellectual potential. Steadily, more and more of those over 32 and facing a return have sought "to continue their education" as the best preparation for satisfying work. This is the group whose return to college has helped to bring into focus the educational needs of all women. In addition, this group is urging younger women to finish their basic educational preparation and offering suggestions, including part-time work, for remaining up to date in their field of work interest during their years at home as those years will be short.

In this drive to realize their true potential, college women evidently welcome full partnership in the pleasures and responsibilities of nurturing sound family life and the civic life of their communities. Freedom to choose a gainful occupation at the appropriate time and the psychic and practical satisfaction, they report, have brought new desirable dimensions to the family circle. They believe and are demonstrating that in this highly professionalized world of community services there are new and valuable ways of participating more profitably, more suitably, and more satisfyingly than the predominantly cookie-baking role to which they were assigned in the 19th century.

Women have sought education for these goals increasingly in public institutions of higher education, partly because they have had to keep their education inexpensive. In 1957 public institutions enrolled 59 percent of the women in college; in 1962, 63 percent.[18] Furthermore, they have depended upon the public universities (in 1957, 58 percent of all universities),[19] of all institutions those with the largest population. Nevertheless, over the years an appreciable number of women have enrolled in liberal arts colleges, 90 percent of which are privately controlled and expensive.

The bachelor's degree has been the limit of formal education for most college women (see table 1). Their major study choices have followed a consistent pattern for many years,[20] and always the relation of studies and future successful paid work has been obvious. A study, for example, of the occupations of the June 1957 women college graduates within 6 months after their graduation showed about 84 percent in the labor market—59 percent in teaching.[21] Relation of choice of studies to other life objectives does, women tell us, exist; but on this point documentation is not so clear. For example, 30,000 college women from all types of institutions, members of the American Association of University Women (AAUW) in 1948,[22] reported that they were satisfied with the non-occupational objectives they had set in college. Many of them attributed their satisfaction to course work, but a close reading of the replies might reassign many of the improved attitudes, values, and opinions to other aspects of college life.

This then is what college women are telling us they have succeeded in achieving and what they want to continue to have: Education; an identity of their own; an increasing share in what Americans value most, a paid occupation; marriage and children and family life; and a citizen's responsibilities. It is for women with these goals and prospects that colleges and universities should be directing their thinking and analyzing and counting their resources in preparation for an answer to the question, "What better can we do?"

WHAT HIGHER EDUCATION CAN DO

What resources are now available to the colleges and universities for providing the education women must have? What could become available? There are a great many, both for the present and for the future, only a few of which can be reviewed here; and some of the most useful will not necessarily add to the cost of higher education.

If information were circulated more widely . . .

Educators in the fields of higher education have learned the pattern of able women's lives, and many believe that it should be supported. But there is still much to be done by way of public enlightenment. If information about women's lives and obligations were thoroughly circulated to the public, the alumni, and the officials of institutions, it would be surprising how quickly attitudes would be affected and changes

[18] U.S. Department of Health, Education and Welfare, unpublished data, and *Opening (Fall) Enrollment in Higher Education, 1962: Institutional Data*, table 1, p. 2; table 2, p. 3.

[19] ——— *Biennial Survey of Education in the United States, 1956–58*, table 6, p. 12.

[20] ——— "Summary Report on Bachelor's and Higher Degrees Conferred During the Year 1961–62."

[21] U.S. Department of Labor .Women's Bureau, *1962 Handbook on Women Workers*, pp. 119 and 120.

[22] Patricia W. Cautley, *AAUW Members Look at College Education*, 1949.

Table 1—Number of women earning degrees in selected fields of study, 1957–58 and 1961–62 and percentage of change

Field	First-level degree			Second-level degree			Doctoral degree		
	1957–58	1961–62	Percentage [1] change	1957–58	1961–62	Percentage [1] change	1957–58	1961–62	Percentage [1] change
Total	116,986	152,683	30.5	21,050	25,717	22.2	941	1,212	28.8
Accounting	437	598	36.8	22	33	(1)	1	1	(1)
Applied social sciences (including social work)	1,391	1,845	32.6	101	202	100.0	6	21	(1)
Biological sciences	3,182	4,825	51.6	404	660	63.7	138	159	15.2
Economics	605	760	25.6	70	89	27.1	5	15	(1)
Education (including elementary, health, physical and recreational education)	57,261	71,316	24.5	14,633	16,094	10.0	341	363	6.5
Elementary education	37,004	47,914	29.5	4,475	4,563	2.0	23	32	(1)
English and journalism	10,796	16,686	54.6	1,150	1,866	62.3	53	96	81.1
Engineering	109	125	14.7	20	40	(1)	4	4	(1)
Fine and applied arts	6,402	7,573	15.2	923	1,293	40.1	28	54	(1)
Foreign language and literature	2,689	5,255	95.4	453	815	79.9	65	71	9.2
Geography	119	157	31.9	28	30	(1)	9	4	(1)
Health professions (including medical technicians, nursing and pharmacy)	8,769	9,365	6.8	711	669	(1)	7	9	(1)
Home economics	4,276	4,253	(1)	440	522	18.6	14	35	(1)
Library science	1,287	1,625	26.3	126	420	233.3	6	3	(1)
Mathematical subjects	1,971	4,255	115.9	240	501	108.8	15	24	(1)
Medical technicians	885	1,127	27.3	6	5	(1)			
Nursing	6,003	6,305	5.0	474	499	5.3			
Pharmacy	391	459	17.4	13	12	(1)			
Physical education	2,900	3,454	19.1	371	449	21.0	29	19	(1)
Physical sciences	1,669	2,146	28.6	271	385	42.1	66	87	31.8
Psychology	2,867	3,821	33.3	399	563	41.1	84	149	77.4
Religion	1,370	1,550	13.1	162	174	7.4	14	12	(1)
Social sciences (including applied social sciences, history, political science and sociology)	13,782	19,133	38.8	1,068	1,652	54.7	96	141	46.9

[1] Percentages omitted when number of degrees is fewer than 50 in either year.

Source: U.S. Office of Education, *Earned Degrees Conferred by Higher Educational Institutions, 1957–58.* U.S. Office of Education, "Summary Report on Bachelor's and Higher Degrees Conferred During the Year 1961–62."

made for the better. Thus society and the college world would be led to accept sympathetically suggestions for new patterns of women's education and employment, and in turn both would set about following them.

Already some changes have been made. Many educators, recognizing the heavy manpower demands, have welcomed the older woman student, both undergraduate and graduate. Out of this has come a new educational pattern, the "continuing education" movement. True "continuing education" stresses these practices: orienting the college-age girl to her life pattern, helping the young married woman to stay current, and counseling the mature

woman returning to study to find exactly what she needs. It is more than adult education as it involves both the young girl and the returning adult woman and focuses the resources of the whole institution upon their education. The continuing education unit of an institution becomes the identifiable focus for all inquiries and plans concerning the education of mature women and has a strong influence on that of younger women. This is the basic plan of most of these programs—those of the University of Minnesota [23] and of the University of Wisconsin, for example. Many other institutions are setting up similar programs. An advantage of such a program is that it can be undertaken simply or elaborately, depending on available financing. Some institutions are meeting other needs of the mature by special, identifiable programs: for example, Douglass College of Rutgers University has one in mathematics; Sarah Lawrence College has an undergraduate degree program for women returning to college; Radcliffe College has an Institute for Independent Study for the extremely talented and highly trained women whose influence is reflected upon the undergraduate; the University of Wisconsin program has one for Ph. D. candidates; and, the AAUW Educational Foundation program has one for women long away from their studies, for career positions on college faculties.

Other institutions have established high status committees to reexamine the position and needs of women on their campuses.[24] If the committees are to have real effect, the institutions must make clear their intent to see that changes found to be needed shall be made in any segment of the academic enterprise, whether in fields related to students or faculty and other policy makers. The decision to update attitudes and to make needed changes can be entered upon at once; neither costs money; both are necessary to success in preparing women for what they want to do and what the world is asking of them.

With knowledge of changing conditions, officials in education—and Government and industry, too—should review attitudes toward and practices in the employment and promotion of women. No teaching is more effective than teaching by example. If it is recognized that gifted women need to have their full part in the future, young women must be able to see this taking place in the institution they attend. They must have before them examples of qualified women who have been accorded high rank and status on the campus and who are in the policy-forming councils of the institution.

Attitudes toward women in professional education would also yield to information. Women are going into graduate schools at very nearly the same rate as men—21.8 percent increase for women and 23.4 percent for men between 1958 and 1960.[25]—but the future requires that larger numbers of women go. Lack of money has been a limiting factor and, except in the fields of science and mathematics, still is. Pretty generally there has been reluctance to grant women scholarships, fellowships, or assistantships, partly because the discontinuity in women's use of their advanced training has not been properly evaluated. The presence on campus of so many older women as students is evidence that women are fulfilling their commitments. Administrators could advance the cause by requesting that women's new pattern of use of education be fully considered in dealing with the competition for the institution's aid or in making recommendations, as in the case of NDEA or Woodrow Wilson fellowship. This move would have an added specific value in that it would help to qualify more women for faculty employment and promotion. The current short supply tends to confirm the fact that old-fashioned prejudices and attitudes still exist among faculty who are searching for new faculty members or handling their promotion.

Institutions already recognize that in the future many women will move about the world and that their undergraduate or graduate studies may be interrupted. Officials should therefore give thought to measures to enable women on the move to complete their studies; for example, by arranging for more interinstitutional acceptance of degree credits; fostering individual work under faculty direction from afar; and integrating summer sessions into total planning for women. The year-round college, which shortens the course to the degree by months, should be a boon to women. Or, if one of these young women is not currently studying, an effort should be made to motivate her and help her to

[23] Virginia L. Senders, "The Minnesota Plan for Women's Continuing Education: A Progress Report," *The Educational Record*, October 1961, p. 271.

[24] Unpublished reports to AAUW Educational Foundation of what higher education is doing and thinking.

[25] U.S. Department of Health, Education, and Welfare, Office of Education, *Total Enrollment in Institutions of Higher Education First Term, 1959–60, Basic Data*, table 1, p. 2.

finish. Arrangements to keep in contact with her could be established wherever she goes through other college women or associations such as the American Association of University Women (AAUW).

Reexamination of curriculum trends would . . .

The heart of the college or university is what it teaches, and of that we like to think the curriculum is a major part. Women's choices over a recent 5-year period are presented on table 1. As the table shows, women have increased their interest in the shortage fields, including economics and the applied social sciences. This table shows that the number and percentage of women studying mathematics and the natural sciences has increased substantially. Pressure for such change has been mostly in terms of national need for such specialists. Stated in another way, job opportunities have been dangled, financing of graduate work has been provided and patriotic duty urged. But some women have chosen these fields to satisfy a personal preference.

The number of engineering degrees awarded women is not large, but the increase is encouraging. A new look at engineering has shown how much of it can be easily done by a trained woman with a trained mind, and the welcome mat has been put out before many doors. Again, shortages have brought this increase about.

Campaigns to inform people of the need for other professional workers are obviously paying off in increased election by women of education as librarians, social workers, religious educators, and foreign language specialists.

Questions may still exist on whether these choices are satisfying women for all their lives, especially as job training. There is much need for research before any definitive comment can be made, but in programs for the mature like the AAUW Educational Foundation's College Faculty Program, a graduate program, the choices follow fairly well the established pattern for women. This is confirmed by analysis of women enrolling in the University of Minnesota's Plan in which one of the largest groups is composed of women seeking to complete their baccalaureate degree. The Plan's *Newsletter* says ". . . the areas of education, social sciences, English and the humanities, and the medical disciplines were the most often mentioned as fields of interest . . . ." [26]

[26] Newsletter, *The Minnesota Plan for the Continuing Education of Women*, February 1963, p. 5.

The Women's Bureau of the U.S. Department of Labor reports [27] that 78 percent of college women working in 1959 were in professional type work, and 12 percent, the next largest group, in clerical work. Table 2 presents [28] the current picture for several fields of work and shows how employment grows out of the higher education major. A picture of the true importance of teaching to women's work goals is clearly evident.

Further guidance on education for the future can be found in the Women's Bureau predictions for 1970:

> About 1 out of every 3 workers will be a woman.
>
> Further expansion in the employment of women in occupations in which they have long been established, such as teachers, office workers, librarians, social workers, home economists, nurses, laboratory technicians, medical and other health workers.
>
> Greater opportunities for women with the required ability and educational qualifications as mathematicians, statisticians, scientists, engineers, technicians of various kinds, and higher level office workers with training in the use of the electronic data processing and other business machines.[29]

Except for occupational competence that students acquire, does the formal curriculum have as much life-long effect upon students as it could have? The issue is being debated. For women, particularly for those in large institutions, there is no question but that more could be accomplished. Many steps might be taken, but of them all, the step most strongly recommended is increased opportunities for the student to be with the teacher. This again is teaching by example. Built into this recommendation, however, are these assumptions: That the teacher must be of superb quality, that many opportunities must be found for the student to work directly with the teacher, and that the teacher must have complete assurance that in the mind of the institution this is his first obligation.

A new look at the extracurriculum would . . .

Whether or not the formal curriculum has an effect on the personality, it is well recognized that the extracurriculum does. This is one reason why there

[27] U.S. Department of Labor, Women's Bureau, *1962 Handbook on Women Workers*, table 6, p. 111.

[28] ——— "Information Relating to College Women," January 1963, table 8, p. 4.

[29] ———, *Highlights 1920–60*, p. 2.

Table 2—Selected professional occupations of women 1960 and 1950

Occupation	Number of women		Percent increase 1950–60	Women as percent of total occupation	
	1960	1950		1960	1950
Teachers, elementary school	866,746	616,208	41	86	91
Nurses, professional	577,038	395,638	46	98	98
Teachers, secondary school	244,975	210,186	17	47	57
Musicians and music teachers	111,235	79,907	39	56	49
Teachers (n.e.c.)	93,960	17,727	430	62	21
Technicians, medical and dental	87,944	44,154	99	62	56
Accountants and auditors	80,483	56,884	41	17	15
Librarians	72,431	49,597	46	86	89
Social and welfare workers, except group	61,465	53,157	16	63	69
College presidents, professors and instructors (n.e.c.)	39,168	29,267	34	22	23
Editors and reporters	38,305	27,413	40	37	38
Artists and art teachers	37,187	30,862	20	36	38
Religious workers	35,349	29,174	21	62	69
Personnel and labor relations workers	30,760	15,344	100	31	29
Sports instructors and officials	25,301	11,315	124	32	25
Dietitians and nutritionists	24,757	21,515	15	93	94
Technicians, other engineering and physical sciences	24,287	16,703	45	13	18
Therapists and healers (n.e.c.)	20,204	12,393	63	54	49
Dancers and dancing teachers	16,892	12,334	37	77	71
Recreation and group workers	16,552	7,134	132	43	42
Technicians (n.e.c.)	16,129	6,473	149	24	34
Physicians and surgeons	15,672	11,823	33	7	6
Natural scientists	15,052	13,654	10	10	11

Source: U.S. Department of Commerce, Bureau of the Census: 1960 Census of Population.

Note: "N.e.c." indicates not elsewhere classified.

Note: Because of rounding, percentages in statistical tables do not necessarily add to 100.

is so much concern about the heavy enrollment of women in the largest institutions. For example, in 1962, 44 institutions with 15,000 or more enrollment had 22 percent of the total women's enrollment. Experience has shown that colleges and universities should seek to develop in the young woman a strong conviction of her own identity, of individual integrity. The exigencies of adult life tend to tear down her sense of her own personality; there is, however, hope that they will be less destructive in the future, as society seems to be moving toward a more precise statement of its expectations for women.

This concentration of women in large institutions has led to consideration of how conditions can be modified so that the girl may survive as a strong individual able to remain secure in the assurance of her own worth. They can be modified, but not without much study of local needs and possibilities and some expenditure of money. The influence of the professional personnel counselors is important in all phases of education, but certainly so in the large institution where "decentralization of programs and functions" [30] is essential. The emphasis here is on building a program to strengthen the individual. In this the extracurricular resources are heavily involved.

In an institution that has residences for women, it is obviously easier to provide extracurricular activities than in a nonresidential college. In both cases, however, the effectiveness of students' experience in them depends in large measure upon the leaders understanding of their obligations and upon the quality of their leadership. They can see that

[30] May A. Brunson, *Guidance: an Integrating Process in Higher Education*, p. 150.

the extracurriculum and the curriculum supplement each other, that liberalizing factors in the college experience are strengthened, and that every girl from a secure base has a chance to try her wings in the intracollegiate world. From modest plans of this sort centered in a college union or a dormitory or so, programs can be extended to larger groups of residences. The "house" plan gives more scope for carrying out the program, but the objectives are the same wherever tried.

Included more and more often in plans are provisions for using the resident faculty, study rooms, and working libraries. Recreation facilities and a recreation program—among the girls themselves or with the men on a guest basis—play a large part in creating the kind of atmosphere and giving opportunity for the experience which many believe necessary. In many plans, classes also play a part. In fact, almost anything that can be devised to give a feeling of unity to a small number of girls and increase their self-reliance has been or should be tried. In a very real sense this is an opportunity for "a room of one's own."

A related attempt to meet the need which is being discussed is the coordinate college. This is a plan of institutional organization in which there is an undergraduate college for men and another parallel one for women. Coordinate institutions vary greatly in responsibilities, composition, and equipment; some have not only their own physical plant and extracurricular program but also their own faculty and administration. Others bear a closer resemblance to the "house plan." The very formality of coordinate organization, which gives a sense of rights and duties, tends to identify more women and to train them for top as well as secondary leadership. At least since Philip E. Jacob made the idea popular in 1957, general opinion as well as academic has been admitting that the "peer group" does a major share of educating the college student. In the coordinate college or the residential set-up, and even in a carefully directed nonresidential college, the institution has a favorable opportunity to influence the "peer culture."

Research if used would . . .

Research now has much to offer the institution as it considers its new direction in women's education. Findings need to be rounded up, sorted, and put to use. A few illustrations from the wealth of material with respect only to women are in order. It has long been known that girls are about 2 years ahead of boys until the middle twenties in maturation. Why is not more being done to capitalize on this 2-year advantage? With such a change it would be possible for the girl to finish her bachelor's degree at about 18 before adult interests in marriage and family life became dominant. There is much to be said for starting school earlier, if the readiness is there, but that change may be for the future.

In the present, much wider use should be made of advanced placement with credit towards the degree. Charles Cole reports, for example, that Harvard College allows as much as 1 year of degree credit on this basis.[31] So also does Radcliffe. The experiment in "Early Admission," fostered by the Fund for the Advancement of Education in the early 1950's, has been allowed practically to die.[32] This is the plan in which selected students enter college at the beginning of their 11th school year. Reports from the women's college involved, Goucher College, were very favorable. The 2-year maturation difference could make this easily possible for women. Clearly colleges should look again at these and other available means to offer young women their maximum opportunity to prepare for adult life.

Mervin B. Freedman has reported research from his Vassar College studies relating to college women. For example, he believes there are two clearly defined periods of development between the late secondary school and early alumnae years. As his second period, "a developmental phase of young adulthood" begins about the junior year, he suggests that this might be "an argument in favor of different kinds of curricula for the two groups of students" (freshman—sophomores; junior—seniors).[33] Institutions have not begun to use his findings in considering future patterns of women's education.

Great Aspirations, the report by the National Opinion Research Center (NORC) of their analysis of 33,000 men and women of the college graduating class of June 1961, states in regard to academic achievement that there is "about the same percentage of men and women in the 'top fifth.' Very roughly speaking, this supports the general impres-

---

[31] U.S. Department of Health, Education, and Welfare, Office of Education *Flexibility in the Undergraduate Curriculum*, p. 13.

[32] The Fund for the Advancement of Education, *They Went to College Early*, p. 9.

[33] Freedman, p. 865.

sion that while there is little sex difference in very top grades, 'women get the B's while men get the C's.'" Men received 17 percent and women 21.2 percent of the top grades.[34] However, it is the similarities rather than the differences which are important to educational planning. Because college women will be in the work force or contributing to policymaking in the general welfare to an even greater extent in the future than they have been, individual institutions of higher education might well review what they are doing to prepare them. Is the institution sufficiently flexible in its curriculum to do this? Or, is it ruling women out, for example, of its Honors Program maintaining that "men remain longer and we get more out of them," [35] and thus not recognizing the timing problem in women's work? Such decisions related to independent study or apprentice teaching would certainly not motivate girls to seek full qualification in the graduate or professional schools, something we want to see them do at an even faster pace.

The future of these especially talented girls, indeed all college women, needs reconsideration from other angles—for example, in their first jobs. If they choose it principally by the size of the paycheck, we know they will be handicapped in achieving the full potential of modern Americans during their lives. An example is to be found on most campuses: Institutions might give a much more serious look at their employment of the college-educated wives of young faculty and graduate students, and they might ask for and follow the suggestions of counselors, including vocational counselors, who have this problem well in mind. If occupational possibilities dependent upon college education could permeate the thinking of the college woman, so much so that it became a topic of leisure-time discussion, much would be done to offset dropouts.

To see the NORC research report—its findings substantiated in many others—only in terms of the top one-fifth is to neglect a major part of its message for women's education. The academic B and C groups are every bit as important as the A's in consolidating the values America believes in. For that purpose, a very broad segment of the citizenry, women as well as men, must be prepared for their share in leadership. They must be able to define their objectives, to select the leaders and correct them when necessary, to explain national aims to others, and to carry them into effect. Women need further motivation to remain intellectually alive and spiritually strong, to see the significance of their individual contribution, regardless of the size of the problem, and to act upon it.

FUTURE SERVICE TO WOMEN STUDENTS

IT seems, then, that the greatest advance that higher education can make in its service to women would be to seek to develop their every faculty and ability. They should give women the help they need to understand the demands the world will make of them and to become strong personalities able to withstand the excesses of the modern world. They need freedom to choose their education to prepare themselves for the life patterns Americans value most. As President Rosemary Park said recently: "Women's life is no longer bounded by the home—in spite of biological differences, the roles of men and women are more similar than they were fifty years ago." [36] Or, to paraphrase a statement of Margaret Mead, future emphasis in the education of women should be on "comparability" as well as "equality." [37] But the time for reappraisal is now.

---

[34] James A. Davis, *Great Aspirations: Volume One*, table 2.12, p. 46.

[35] Quoted by J. W. Cohen, "Problems of Honors Programs," *The Superior Student*, October 1961, p. 10.

[36] Terry Ferrer, "Rosemary Parks: New President of Barnard," *Saturday Review*, April 20, 1963, p. 66.

[37] Margaret Mead, "Gender in the Honors Program," *The Superior Student*, May 1961, p. 2.

Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

Please send me *HIGHER EDUCATION* for:

☐ 1 year ($1.25) ☐ 2 years ($2.50) ☐ 3 years ($3.75)

Check or money order is enclosed.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____

OFFICE OF EDUCATION *Studies* AND *Surveys*

The Academic Fields of Graduate Deans in U.S. Universities

A STUDY recently completed in the Office of Education has secured data on the academic fields of all persons responsible for the administration of graduate study in 145 American universities. Included were all persons who had served as the principal administrator of graduate work since a separate organization for graduate administration was established in their institutions. The total number of persons included is 720, of whom 156 were serving as graduate deans at the beginning of the 1962–63 academic year.

The study was conducted by John L. Chase, specialist for graduate education, Division of Higher Education.

The study included at least one institution from all 50 States and the District of Columbia, but included only those institutions which had awarded doctor's degrees in at least three distinct academic disciplines over the past 5 years (1958 through 1962), and which had a separate organizational unit for the administration of graduate work. Since 149 universities satisfied these criteria, the data from 145 represent more than 97 percent of the universe.

The figures in the table below show the broad academic areas represented by the graduate deans' own specialized training. From the percentage figures for the total number of deans and for those serving in 1962, one can get some impression of long-term trends. Most noticeable is the fact that the representation of deans from the social sciences has not changed perceptibly, while that from all other areas has. Further, the relative number of deans from the humanities and "other" fields (of which education is the largest component) has declined rather sharply, while the number from the two major natural science areas has risen proportionately.

Listed below are the ten most frequently represented individual fields, the first column showing the number in the whole sample of 720 deans, the second showing the number of deans serving in 1962. The fields are listed in declining order of the number represented.

Most frequent fields

In total number (720)	*Among current (1962) deans (156)*
1. Chemistry (70)	1. Chemistry (22)
2. English (59)	2. English (13)
3. History (58)	3. History (12)
4. Physics (43)	4. Physics (11)
5. Economics (41)	5. Mathematics (incl. statistics) (10)
6. Education (40)	6. Engineering (9)
7. Philosophy (38)	7. Political Science (8)
8. Political Science (37)	8. Psychology (7)
9. Mathematics (incl. statistics) (36)	9. Economics (7)
10. Botany (29)	10. Philosophy (6)

Careful comparison of the two columns shows, first, that the rank order of the first four fields—chemistry, English, history, and physics—is the same in both cases; second, that eight of the ten fields appear in both columns. Education and botany are the only fields in the whole sample which are not repeated in the smaller number; their places are taken by engineering and psychology. Changes in the status of education and botany may have resulted, on the one hand, from the growth of what were once primarily teacher-training institutions into multipurpose universities; and, on the other, from the recent rapid growth of new fields in the bio-

Academic areas represented by graduate deans

Academic areas	All deans		Current (1962) deans	
	Number	Percent*	Number	Percent*
All areas	720	100.0	156	100.0
Agriculture, biological and medical sciences	115	16.0	30	19.2
Engineering, mathematics and physical sciences	199	27.6	55	35.3
Humanities	165	22.9	27	17.3
Social sciences (incl. psychology)	194	27.0	42	26.9
Other fields	47	6.5	2	1.3

*Figures rounded to nearest tenth of 1 percent.

logical sciences like microbiology, genetics, and biophysics.

With respect to the overall balance between the natural science fields and the humanities and social sciences, it is noticeable that four of the leading fields in both cases belong to the natural science (including mathematics and engineering) area. That graduate study in these fields has benefited from recent large-scale industrial and government support is fairly obvious; but that they also have a long and respectable academic and scholarly history is also true. As for the humanities, English and philosophy have not benefited to the same extent from recent external support, yet they have retained a strong position. And the same is largely true of the social science fields in the two lists of the leading ten. History, which we have grouped with the social sciences, might also appropriately be classified as one of the humanities, and psychology seems to lie on the border line between the social and biological sciences. On the whole, the fields represented on both lists seem to reflect the continuing strength and importance of the central academic disciplines in all the broad areas of graduate study.

Studies and Surveys in Progress

THE Division of Higher Education has a number of studies and surveys in progress and planned for publication within the next year. *Higher Education* will report on them more fully shortly before the published reports are released. The following lists, however, give the title of the publication, the author, and, for many, a short description of its coverage.

Business Administration

1) *Analysis of Higher Education Income and Expenditures, 1931–32 Through 1959–60*, Leslie F. Robbins and Louis A. D'Amico. Analyzes the significance of changes in income and expenditures over this period in terms of gross dollars, per student amounts, and constant-dollar amounts.

2) *College and University Buildings Constructed, 1961–62*, W. Robert Bokelman and Leslie F. Robbins.

3) *College and University Buildings Constructed, 1962–63*, W. Robert Bokelman and Leslie F. Robbins.

4) *College and University Endowment Study, June 30, 1963*, Paul K. Nance and A. Kent Halstead. Updates OE's 1958 survey. Provides information from approximately 200 colleges and universities having some 85 percent of the total endowment held by higher education institutions.

5) *College and University Facilities Survey, Part 3, Inventory*, E. Eugene Higgins. Reports the building-by-building inventory of the physical plants of each college and university as of Dec. 31, 1957. Many of the data sheets that appeared in fiscal year 1963 were based on information derived from this survey.

6) *Guide to College Business Office Functions*, Paul K. Nance. Intended as a guide to newer college business officers in becoming oriented to this field and to those on the job for some years as a check on their procedures for doing their various tasks.

7) *Higher Education Basic Student Charges, 1962–63*, W. Robert Bokelman and Louis A. D'Amico.

8) *Higher Education Basic Student Charges, 1963–64*, W. Robert Bokelman and Louis A. D'Amico.

9) *Higher Education Cost and Price Indexes*, A. Kent Halstead. Planned as an objective indication of the real significance of cost and price changes in higher education.

10) *Higher Education Salaries, 1962–63*, W. Robert Bokelman and Louis A. D'Amico.

11) *Higher Education Salaries, 1963–64*, W. Robert Bokelman and Louis A. D'Amico.

12) *New Colleges and Universities Founded or to be Founded, 1961–65*, Leslie F. Robbins. Determines the contributions made to the provision of higher education facilities by completely new institutions. Part 5 of the College and University Facilities Survey series.

13) *Trends in Higher Education Salaries, 1960–61 to 1962–63*, W. Robert Bokelman and Louis A. D'Amico. Compares the changes in administrative and faculty salaries in higher education institutions for the same institutions.

Faculty and student services

1) *Analysis of Financial Undergraduate Assistance*, J. Harold Goldthorpe. Provides an analytical summary of the 1959–60 institutional student aid data presented in *Financial Aid for College Students: Undergraduate* (Bulletin 1962, No. 11). Presents scholarships, student employment and loans from institutional funds as related to the costs of college attendance and makes comparisons with the data of the earlier (1955–56) study.

2) *State Financial Aid Programs*, J. Harold Goldthorpe. Summarizes the principal features, provisions, costs, and the number of college students aided under the 106 State administered and financed scholarship and loan programs in 35 States, District of Columbia, and Puerto Rico.

3) *Student Services Administration*, Donald W. Robinson. Provides information on proportionate costs for the administration of student personnel services, by size, type, and control of institution.

State and regional organization

1) *Boards Responsible for Nonpublic Education*, James C. Messersmith. Describes the structural organization and functions of boards which have governing, coordinating, supervisory, or other working relationships with groups of nonpublic (Church-related) institutions of higher education.

2) *Case Studies in Academic Administration in Liberal Arts Colleges*, John H. Russel and Archie R. Ayers. Describes the development of academic policy and the administration of policy in 9 selected liberal arts colleges. Major items: faculty personnel, curriculum, instruction, budget, and certain organizational relationships. First of a series of case studies in groups of institutions identified by level of offering and type of control.

3) *Survey of State Legislation Relating to Higher Education*, S. V. Martorana and Ernest V. Hollis. Presents one of a series of recurring surveys which provide an annual compilation and analysis of legislation considered or adopted concerning colleges and universities.

Arts and sciences

1) *Curriculum Patterns in Higher Education*, Harold A. Haswell. Deals with baccalaureate degree curriculums in 16 selected major fields of the biological sciences, humanities, mathematics and physical sciences, social sciences, agriculture, and engineering. For each field a structured sample of liberal arts colleges and universities is used. The percentages of the total credits necessary for graduation in the different areas of study will be shown for each field.

2) *Graduate Study in the United States: A Statistical Report of Recent Trends, 1950–51 through 1959–60*, John L. Chase. Part I, Historical Background: General Trends in Earned Degrees and Enrollments, Undergraduate and Graduate, 1900 to 1960; Part II, Trends in Earned Doctor's Degrees Awarded; Part III, Master's Degrees tables. Includes a compendium of statistical information relating to graduate education in bulletin form.

3) *Survey of Mathematics Programs in Institutions Granting Bachelor and Higher Degrees*, Clarence B. Lindquist. Presents a study in depth of the undergraduate and graduate programs in mathematics in 877 colleges and universities for 1960–61.

Professional and technical education

1) *Comparative Study of Educational Attainment of Rural Populations and the Implications for Colleges of Agriculture*, Henry S. Brunner. Contains a compilation of census data needed in studying the population as a source of trained manpower for the broad agricultural industry now involving many nonfarm occupations.

2) *Curriculum Patterns in Higher Education: Agriculture*, Henry S. Brunner. One of a series of parallel studies in various areas by specialists in higher education programs branch. The findings should promote better distribution of the parts of the academic program allotted to the various curricular areas in agricultural colleges throughout the Nation. Each curriculum will show the basic distribution allocated to the agriculture major, the natural sciences, the humanities, the social sciences, electives, and miscellaneous courses.

3) *Curriculum Patterns in Higher Education: Engineering*, Harold A. Foecke. One of a series of parallel studies in various areas by specialists of higher education programs branch. The findings should promote better distribution of the parts of the academic program allotted to the various curricular areas in engineering schools throughout the Nation. Each curriculum will show the basic distribution allocated to the engineering major, the natural sciences, the humanities, the social sciences, electives, and miscellaneous courses.

4) *Education for Technician and Semiprofessional Occupations: A Selected Bibliography*, Lee M. Frederick and Kenneth A. Brunner. An annotated list of important articles and books in this area published since 1940.

5) *Engineering Enrollments and Degrees, 1962*, Harold A. Foecke.

6) *Enrollments and Degrees in Agriculture*, Henry S. Brunner.

7) *Organized Occupational Curriculums in Higher Education*, Kenneth A. Brunner.

Teacher education and development programs

1) *Reporter No. 6*, Winslow R. Hatch and Alice L. Richards, sixth in the series of annotated listings of studies furnished to the Clearinghouse of Studies on Higher Education by colleges and universities.

What Standards Do We Raise? New Dimensions in Higher Education, No. 12 (Winslow R. Hatch), 12th in the series reporting trends and developments in higher education.

2) *Fifth-Year Programs in Classroom Teacher Education*, Henry Harap and John B. Whitelaw. Report of a survey of 1,976 programs in 462 institutions.

3) *Summer Session Programs in Colleges and Universities, 1960*, Harold A. Haswell and Bernice R. Retzlaff.

Patterns of Administration

AN ARTICLE on a study recently completed by John H. Russel and Archie R. Ayers, specialists in the Division of Higher Education, appeared in the May issue of the *Junior College Journal.*

The article, entitled "Patterns of Administration" discusses the study of *Internal Structure: Organization and Administration of Institutions of Higher Education.* An item on this study appeared in the December 1962 issue of *Higher Education.* It is available by number (OE–53012) from the Superintendent of Documents, Government Printing Office, Washington, D.C., for 45 cents.

International Education

Agency for International Development

Agricultural college in Tanganyika

THE Agency for International Development has awarded a $1,250,000 development loan to Tanganyika to build and equip an agricultural college at Morogoro, Tanganyika. The college, which is intended to strengthen the Agricultural Extension Service, will accommodate 100 students.

A project supervisor, three lecturers, and a farm specialist, all from West Virginia University, will provide technical assistance, curriculum guidance, and instruction at the college. The project is also being aided by a grant from the Rockefeller Foundation and the Government of Tanganyika.

The AID loan is repayable in U.S. dollars within 40 years, including a 10-year grace period.

Africans study in U.S.

THIS FALL 300 African students will begin 4-year college courses in the U.S. under the African Scholarship Program of American Universities. The program is supported by the Agency for International Development, 213 American colleges and universities, and the participating African nations. It is administered by the African-American Institute.

The participating colleges and universities offer tuition-free undergraduate scholarships, and the African countries contribute transportation costs for the students. The AID contract provides for maintenance of the students in this country, including room and board and related student costs.

The new group will bring to approximately 800 the number of African students who have received academic scholarships in the program. A recent study has shown that enrollment for the Africans is broken down into the following fields: Natural sciences, 60 percent; social sciences, 20 percent; and the humanities, 20 percent. Midyear grades showed 59 percent of the Africans as honor students.

Teacher education in Mali and Guinea

EDUCATION in Mali and Guinea will be strengthened by a $2.1 million loan from the Agency for International Development to Mali. The loan will aid in the construction of permanent facilities for a higher teachers training college and in the establishment of a pedagogic institute.

The project is part of major reforms of the two educational systems. Guinea will provide half of the students for the Mali teacher training college, and Mali will send students to Guinea for instruction in other fields of education.

Higher education in Tanganyika aided

THE Agency for International Development has awarded two $800,000 loans to Tanganyika to

strengthen higher education facilities. One loan will help finance the construction of a 200-student teacher training college in Dar-es-Salaam, and the other loan will aid in the construction of buildings for the University College, a constituent institution of the University of East Africa.

Alliance for Progress

Graduate business school in South America

SOUTH AMERICA'S first school of business administration operating exclusively at the graduate level will be established in Lima, Peru, this fall by Stanford University in an Alliance for Progress project supported by the Agency for International Development.

In general, the new institution's curriculum will be patterned after that of the Graduate Business School at Stanford. Its initial 10-man faculty, drawn mainly from Stanford, will gradually become all Peruvian. The first regular class of approximately 50 full-time graduate students will enroll in April 1964.

The 5-year project is expected to cost more than $2 million in all, with AID and Peru sharing expenses.

Rural education in Bolivia

RURAL EDUCATION in Bolivia is being strengthened by an Alliance for Progress contract to extend and expand a teacher training project begun in 1961. The new group of 1,000 elementary school teachers will receive classroom and laboratory training as well as on-the-job supervision.

The Agency for International Development is advancing $125,000 to Bolivia to buy teaching kits. In addition, room and board for the teacher trainees will be paid from counterpart funds, totaling $52,000.

The teacher trainees must have prior teaching experience. Their salaries are being paid by the Bolivian Government. An estimated 30,000 rural school children will be directly affected by the project.

Engineering study program for Latin America

THE Alliance for Progress will support an applied research program which will attack civil engineering problems of technical, social, and economic importance to Latin American development.

The Massachusetts Institute of Technology was awarded a $500,000 contract from the Agency for International Development in support of its Inter-American Program in Civil Engineering. Faculty-student teams from MIT and Latin American universities will cooperate in applying the latest engineering methods to specific problems. Project sites are located in Venezuela and Colombia.

Physics in Argentina

AN EXCHANGE PROGRAM between Stanford University and the Argentine Institute of Physics is being supported by an Alliance for Progress agreement. Stanford will send one faculty member to teach at the Argentine Institute for a year, and one senior faculty member and 4 Argentine graduate students will study at Stanford.

In addition to the exchange, the $303,250 technical assistance agreement will help support the purchase of specialized equipment and experimental research. Argentina's National Development Council will provide the equivalent of $390,000 in support of the program.

In the Office of Education

- Fourteen educators from Colombia, Costa Rica, El Salvador, Paraguay, and Peru were invited to attend the Eighteenth National Conference of the National Commission on Teacher Education and Professional Standards of the National Education Association held at the Ohio State University, June 25–28. The educators attended general sessions and participated in small group discussions of new developments in teacher education in the United States.

- This past summer 194 American teachers participating in the teacher exchange program of the Office of Education attended seminars abroad. Twenty teachers of world history went to France, 20 teachers of ancient history went to Greece, 40 teachers of German went to Germany, 25 teachers of French went to France, 50 teachers of Spanish went to Spain, 19 teachers of the classics went to Italy, and 20 teachers of secondary education went to India. The teachers' programs were conducted by the Teacher Exchange Section of the Bureau of International Education.

- A planning conference of college and university coordinators who work with the International

Teacher Development Program was held in the Office, July 15–16. Representatives from 11 colleges and universities along with representatives from the Bureau of Educational and Cultural Affairs of the Department of State attended. At the conference all aspects of the university phase of the grantees' training were discussed, and final arrangements were made for receiving the new group of foreign educators in September.

• The Teacher Development Program for the coming year will include 730 participants from 73 countries and dependencies. Groups of visiting educators are being assigned to 11 cooperating colleges and universities for special sessions. These include: Arizona State University, the University of Michigan, Northwestern University, University of Oklahoma, Oregon State University, The University of Texas, San Diego State College, San Francisco State College, Stanford University, University of Washington, and Western Michigan University.

• A summer seminar at the University of Wisconsin at Milwaukee was held August 19–30 for approximately 60 participants in the general and higher education fields. A similar seminar for 30 technical and engineering participants was held concurrently at Wayne State University. Both seminars were developed by the Technical Training Section of the Bureau of International Education.

OE program notes

Project English

New demonstration centers

TWO NEW DEMONSTRATION CENTERS in English have been approved by Project English. The reading and language arts center at Syracuse University will demonstrate the teaching of reading to students in grades 7–12. The center will develop 10 films for use in regular junior and senior high school classrooms, and a teachers' manual to guide the use of the films in college-method courses. Director of the project is William D. Sheldon; Federal cost is $127,914.

Western Reserve University and the Euclid Central Junior High School in Euclid, Ohio, were awarded a $40,810 contract to develop comprehensive programs in English for grades 7–9. The programs cover literature, language, and composition for average and honors students. The exhibit programs will be taught in the Euclid Central Junior High School; they will be publicized by a periodical, by 2-day conferences, and by distribution of new teaching materials. Co-directors are George Hillocks, Jr., Euclid Central Junior High School, and John S. Diekhoff, Western Reserve University.

New curriculum study centers

CURRICULUM STUDY CENTERS recently approved by Project English include the following: The State of Wisconsin Department of Public Instruction will develop a sequential curriculum in linguistics, logic, semantics, rhetoric, composition, and literary analysis and criticism for the English language arts, grades K–12. In the development and testing of its new curriculum, the center will involve the teachers of the entire State—elementary and secondary English teachers and college professors of English and education. Experimental centers will be established in selected areas. Robert C. Pooley, University of Wisconsin, is director of the center which will cost $200,000.

Florida State University and the State of Florida Department of Education will develop and test three sequential English programs for grades 7, 8, and 9; one curriculum will be based on topics or themes significant in human experience, one on definite facets of subject matter, and a third on sequential steps for pupil development in composition, in the reading of poetry and fiction, and in the understanding of the structure of the English language. The project director is Dwight L. Burton. Federal cost for the 4 year project is $184,678.

National Defense Education Act

Fellowships awarded

THE U.S. Commissioner of Education has announced the award of federally financed fellowships to 1,500 graduate students scheduled to attend 154 colleges and universities in 50 States and the District of Columbia during the 1963–64 academic year.

These awards bring to about 4,100 the number of graduate fellows receiving stipends in 1963–64 under terms of the National Defense Education Act. Since fellowships may run for 1, 2, or 3 years, some 2,600

fellows who received awards in 1961 or 1962 will be continuing their studies.

About 7,000 fellowships have been awarded since the program got underway in 1959. The total expenditure in Federal funds for the program amounts to approximately $80 million, half of which has gone to the students in the form of stipends and half to the institutions to help defray the cost of the programs in which the fellows are studying.

Total cost of the fellowships to the Office of Education in 1963–64 will be $21.2 million, including support for student stipends and grants to institutions for maintaining the 941 graduate programs in which the 4,100 fellows are enrolled. The institutions nominated the fellows for awards. Purpose of the awards is to increase the number and quality of students preparing for college teaching and to strengthen graduate facilities.

Of the 1,500 new awards, 1,383 are for 3 years, 110 for 2 years, and 7 for a single year. The fellows are paid $2,000 in the first study year, $2,000 in the second, and $2,400 in the third. They also receive an annual allowance of $400 for each dependent.

All major areas of study are represented in the new awards: 45 percent—almost half—are in scientific and engineering subjects; 21 percent in the humanities, 24 percent in the social sciences, and 10 percent in education.

New director of graduate fellowships

ALAN D. FERGUSON has been named director of the National Defense Graduate Fellowship program in the Office of Education. Since 1961, Dr. Ferguson has been national representative of the Woodrow Wilson National Fellowship Foundation, Princeton, New Jersey, and director of its dissertation fellowship program. In his new position Dr. Ferguson succeeds Everett Walters, who on July 1 returned to his position as dean of the Graduate School of Ohio State University from which he had been on a year's leave of absence. Dr. Walters has recently been named vice president for academic affairs at Boston University.

Dr. Ferguson was director of admissions and assistant dean of Yale University Graduate School, New Haven, Connecticut from 1953 to 1961. During World War II, he served with the U.S. Army in India, the Western Pacific, and Panama.

Dr. Ferguson received his B.A., M.A. and Ph. D. degrees from Yale University. He has written several articles on Russian history and edited a source book on Russian history to be published this year. Dr. Ferguson is a member of Phi Beta Kappa and the Association for Slavic Studies.

Title VI, language development program

THE Office of Education has recently negotiated 10 contracts with educational institutions under Title VI (language development) of the National Defense Education Act. The holders of contracts and their provisions are as follows:

1. Calvin College, Grand Rapids, Mich., to prepare a textbook and related materials entitled *Modern Dutch: A First Year College Level Audio-Lingual Course for the Dutch Language*. The Dutch language is spoken by approximately 16 million people in the Netherlands, Belgium, and various other parts of the world, and has been designated by the U.S. Commissioner of Education as one of the important modern foreign languages for which adequate instruction is not readily available in the United States.

The project, being directed by Walter Langerwey, associate professor of Dutch language and literature at Calvin College, began June 1, 1963, and will be completed by August 31, 1965. The total cost will be $19,195.

2. The Office of Scientific Personnel, National Academy of Sciences, Wash. D.C., to analyze academic and other pertinent information concerning the careers of approximately 1,000 persons who completed doctoral degrees in modern foreign languages and linguistics between 1957 and 1961.

The study, which utilizes modern methods of coding and computing, is designed to provide comprehensive data on the relationships between formal academic training and career accomplishments. It is based upon the content of the doctoral records file maintained by the National Academy of Sciences. Included among the dozen or more characteristics surveyed are: Field of language specialty, regional distribution and age at significant career stages, predoctoral professional experiences, first postdoctoral employment, citizenship, number of dependents, and schools attended for undergraduate and graduate training.

M. H. Trytten, Director of the Office of Scientific Personnel, National Academy of Sciences, is in charge of the project. It is to be completed by Sept. 14, 1963, at a cost of $2,542.

3. Ohio State University, Columbus: To conduct a language research project to ascertain the words used most frequently in spoken contemporary Russian. Currently, there is no word count of spoken Russian available in the United States.

About 20 modern Russian plays concerning Soviet life constitute the basic resource of the study. The plays contain some 500,000 words of dialogue with a minimum of political and Communist terminology. These words are being analyzed to show frequency of occurrence and the grammatical category to which each belongs. The study is expected to benefit authors of Russian language textbooks and of other instructional materials and to encourage uniformity of the vocabulary taught in Russian language courses at U.S. colleges and universities.

Leon I. Twarog, chairman of the Department of Slavic Languages and Literatures at Ohio State, is conducting the study. It began June 1, 1963, and is to be completed by August 15, 1964, at a cost of $18,214.

4. San Francisco State College, San Francisco, Calif: To prepare an annotated reader in Chinese with accompanying recordings for third-year college students. Currently, there are few suitable reading materials in Chinese available for teaching at this level.

The new reader is to be a Chinese version of an anthology of works by contemporary Chinese authors, reflecting the intellectual and social trends of modern China, published in English translation in March 1963. Its editor, Kai-yu Hsu, is head of the Foreign Language Department at San Francisco State College.

Dr. Hsu is supervising the preparation of the Chinese text without compensation. The project, which began June 15, 1963, is to be completed by April 15, 1964, at a cost of $2,754.

5. The University of Chicago: To prepare an introductory course in Urdu, the official language of Pakistan, as a means of helping students develop a basic foundation in this language and the ability to distinguish it from Hindi, which is the official language of India. Presently there is a need for a text for beginning students who plan to become specialists in Urdu, its literature and culture. Hindi and Urdu differ chiefly in pronunciation, writing systems, and literary vocabulary.

C. M. Naim, lecturer in Urdu and research associate in Hindi at the University of Chicago, is directing the preparation of the Urdu course. The manuscript is to be completed by June 26, 1964, at a cost of $17,342.

6. The University of Hawaii, Honolulu: To conduct research leading to preparation of a dictionary of Maranao, one of the eight major languages of the Philippine Islands. At present there exist very few reference works in Maranao, which is spoken by about 250,000 inhabitants of the Lanao provinces of Mindanao.

Based upon the spoken form of Maranao, the new dictionary is expected to benefit technicians developing literacy materials for this language, linguists interested in the geographic area, prospective teachers in its elementary schools, and students of the language. Legislation recently enacted by the Government of the Philippines requires that the first 2 years of elementary education be conducted in the various vernaculars.

Howard P. McKaughan, associate professor of linguistics and acting chairman of the Department of Linguistics, University of Hawaii, is directing the project. In the initial phase a master file of currently available entries will be established; it will be augmented by systematically collected data in the fields of religion, education, agriculture, and politics. This part of the project is to be completed by July 1, 1964, at a cost of $25,558.

7. Michigan State University, East Lansing: To prepare materials for a 2-year introductory course in Hausa, the most important West African language.

At present, there is no published Hausa course with pronunciation and intonation drills adequate for teaching the spoken language. The new Hausa course is also designed to develop the linguistic skills required to learn other African languages. The project will be based on a study of Hausa syntax performed under a previous contract with the Office of Education. A complete set of taped recordings will accompany the new materials.

Professor Charles Kraft, director of the African Studies Center, Michigan State University, is in charge of the project. It is to be completed by Dec. 31, 1964, at a cost of $27,968.

8. New Haven College, West Haven, Conn.: To prepare a text dealing with the formation and classification of words in Bini, the second language of the western region of Nigeria.

The new text will be the third part of a general reference work on the Bini language; the first two

parts covered the phonology and morphology of Bini. The three volumes will be used as lesson materials on Bini by American students of this language and of other languages of the Edo group in which it is classified.

Roger W. Wescott, who developed the first two units of the Bini grammar, is also directing the third part of the project. It began July 1, 1963, and is to be completed Sept. 30, 1963, at a cost of $7,473.

9. Yale University, New Haven, Conn.: To conduct research leading to preparation of a college textbook for beginning students of Polish. Currently, there is no Polish text for this level of instruction that reflects contemporary knowledge of linguistics and language teaching.

The new text will present a comprehensive course of 30 to 40 lessons in standard colloquial Polish arranged to help students acquire speech habits by intensive drill; it will emphasize expressions that convey ideas rather than isolated words and grammatical rules. The introduction will provide an outline of Polish speech sounds and an explanation of the transcription system used. A grammatical synopsis and glossary will follow the main body of the text.

The initial phase of the project covers the summer of 1963 and the ensuing academic year. During this period a number of lesson units will be developed in preliminary form for trial use by the project director with his Polish classes. The following summer and academic year will be devoted to necessary revisions and preparation of the manuscript for the printer.

Alexander M. Schenker, associate professor of Slavic Linguistics at Yale University, is directing the project. Phase I is to be completed by June 14, 1964, at a cost of $6,754.

10. The University of Washington, Seattle: To prepare a short sound film presenting dramatized readings from French literature. The aim of the project is to develop specialized instructional materials that convey the artistic and cultural aspects of the French language to students. A booklet of commentary on the background of the literary works will accompany the film.

The film and booklet will be made available for experimentation in interested schools and colleges provided the institutions agree to report on student achievement, student and teacher reaction and to make recommendations for improving the materials.

Howard Lee Nostrand, chairman of the Department of Romance Languages and Literature, University of Washington, is in charge of the project. It began July 15, 1963, and is to be completed in 1 year at a cost of $3,659.

Prediction in Education

In a monograph prepared under a grant from the Office of Education, Robert L. Thorndike of Teachers College, Columbia University, discusses the imperfection of prediction in education. Dr. Thorndike examines the concepts of overachievement and underachievement, evaluates them, points out some of the problems in research dealing with them, suggests ways to minimize or eliminate errors in design, and provides a checklist of precautions for conducting better, more meaningful studies.

Entitled "The Concepts of Over- and Underachievement," the monograph has been published by the Bureau of Publications of Teachers College.

Other Program Notes

Educational Television

The Educational Television Facilities Act (Public Law 87–447) authorizes Federal financial aid on a matching-grant basis for the establishment of new noncommerical educational television (ETV) broadcast facilities or expansion and improvement of existing stations. The goal is to encourage States, communities, schools, colleges, and public and private agencies to broaden educational and cultural opportunities for adults and children through the use of television channels set aside for education by the Federal Communications Commission.

The act authorizes the appropriation of $32 million, to be allocated over a period ending July 1, 1968, for matching grants in support of approved projects submitted by eligible applicants in the 50 States, the District of Columbia, and Puerto Rico. Total grants for facilities in any one State are not to exceed $1 million.

The program got under way when $1.5 million became available for allocation on May 17, 1963. The Congress will be asked annually to appropriate additional authorized funds to continue the program.

Tax-supported colleges and universities are among those eligible to participate in the program. In-

stitutions wishing to be continuously informed of program actions should make a written request to be included in the Educational Television Facilities Program Information Register to:

The Secretary of Health, Education, and Welfare
Educational Television Facilities Program
U.S. Department of Health, Education, and Welfare
Washington, D.C. 20202

National Science Foundation

Grants for science

THE National Science Foundation has awarded $7,613,325 in grants to 397 institutions of higher education to strengthen college and university science facilities.

Although use of the grants is restricted to the direct support of science activities, institutions may decide how best to apply the funds for such purposes. Reports from colleges and universities participating in earlier programs indicate that the grants have been used for the research of younger faculty members, purchase of essential scientific equipment for teaching and research, improvement of science libraries, and strengthening of undergraduate programs in the sciences.

This is the third year in which NSF has made these institutional grants to colleges and universities. This year grants were made to institutions in every State and in the District of Columbia and Puerto Rico.

NATO postdoctoral fellowships in science

ABOUT 45 North-Atlantic Treaty Organization Postdoctoral Fellowships in Science will be awarded citizens and nationals of the U.S. to encourage further study in the sciences abroad. The National Science Foundation will administer the United States program.

Applicants should be of demonstrated ability with special aptitude for advanced training in the sciences. They must, by the anticipated beginning of the fellowship, have earned a doctoral degree (or have research training and experience equivalent to that represented by the degree) in one of the following fields: Mathematical, physical, medical, biological and engineering sciences; anthropology; geography, psychology (excluding clinical psychology); sociology (excluding social work); economics (excluding business administration); the history and philosophy of science; and interdisciplinary fields (oceanography, meteorology, biochemistry, and biophysics).

Fellows will receive $5,500 for tenures of a full year and $4,125 for 9 months. Limited round-trip travel and dependency allowances will also be provided.

Applications and additional information may be obtained from the Fellowship Office, National Academy of Sciences, National Research Council, 2101 Constitution Avenue NW., Washington, D.C., 20550. Applications must be received by Oct. 18, 1963. Awards will be announced on Dec. 9, 1963.

Graduate fellowship programs

APPLICATIONS are now being accepted in two National Science Foundation graduate fellowship programs. Applications for the cooperative graduate fellowships for academic year 1964–65 must be received by Nov. 1, 1963; those for summer fellowships for graduate teaching assistants for the summer of 1964 must be received by Dec. 6, 1963. Applications should be sent to the participating institutions.

The two fellowship programs are administered cooperatively by NSF and U.S. institutions of higher education that confer doctoral degrees in mathematics, engineering, and the sciences. About 180 institutions will participate.

A list of the participating institutions and further information on the programs can be obtained by writing to the National Science Foundation, Washington, D.C., 20550.

Senior foreign scientist fellowships

FIFTY-THREE senior foreign scientists have been awarded fellowships by the National Science Foundation enabling them to teach and conduct research in the United States. Tenures range from 5 months (one semester) to 12 months. The fellows were chosen by NSF from among foreign scientists nominated by the 80 institutions at which the fellowship teaching and research may take place.

Each fellow must affiliate with a participating institution and devote full time to his fellowship activities during the tenure of his fellowship. Stipends are commensurate with salaries paid to U.S. faculty members of similar rank and status at the host institution.

NSF estimates manpower resources

A STATISTICAL summary on manpower resources in science and technology recently published by the

National Science Foundation estimates that about one-half million persons are working as scientists, nearly one million as engineers, one million as technicians, and one-quarter million as teachers of science and mathematics in secondary schools.

The summary, entitled *Profiles of Manpower in Science and Technology*, estimates that specialized manpower in science and technology is now about 3.6 percent of the labor force, is expected to become 4.7 percent in 1970 and is growing at a rate of about 4.3 percent per year. It also estimates that about 1 scientist in 5 and 1 engineer in 100 has a doctorate.

Copies of *Profiles* are available on request from the Printing and Publications Section, National Science Foundation, Washington, D.C., 20550.

Public Health Service

Research grants and fellowships

DURING fiscal year 1963, which ended June 30, the Public Health Service awarded 16,061 research grants and 4,219 fellowships, including research career awards, totaling $435,067,546.

The awards were made by the National Institutes of Health and the Bureau of State Services of the Public Health Service, acting upon recommendations from national advisory councils and other consultive groups, with the NIH Division of Research Grants acting as coordinator.

Audiology grant to Northwestern

NORTHWESTERN UNIVERSITY has received a $200,000, 5-year grant from the Public Health Service to augment the training of postbachelor students in audiology. (Audiology is the study of the process of hearing.) The grant will enable Northwestern's division of audiology to set up facilities at Cook County Hospital to provide audiological services to hospital in-patients. The students will receive training at the hospital.

Atomic Energy Commission

ASEE programs for colleges

THE American Society for Engineering Education (ASEE), through contracts with the Atomic Energy Commission, will sponsor two new programs for colleges, universities, and technical institutes during the academic year 1963–64.

The first, a nuclear science and engineering consultation program, will provide colleges, universities, and technical institutes with visiting scientists, engineers, and engineering educators who will lecture and be available for conferences on various aspects of nuclear science and engineering. The consultants, who come from educational institutions, research laboratories, and industrial organizations, will be requested from the individual institution. Requests should be made to the ASEE, University of Illinois, Urbana, Ill.

The second program, a series of short topical conferences in nuclear engineering, has two purposes: to stimulate the interchange of knowledge not only on a purely research basis, but also on the interpretation of graduate study programs; and to modify and develop graduate study programs with an emphasis on improving the effectiveness of graduate study.

ASEE plans to conduct four conferences between Oct. 1, 1963, and June 30, 1964. Participation is limited to 20 and will be by invitation. The short topical conferences supplement the summer institute program sponsored by the AEC and ASEE.

Spirit of a Free Society

As a part of its observance of the 10th Anniversary of the Fulbright Agreement between the United States and the Federal Republic of Germany, the U.S. Educational Commission in the Federal Republic has published *Spirit of a Free Society* in honor of Senator Fulbright. In its dedication to him the Commission expressed "sincere appreciation of his wisdom in establishing the program which made it possible to transform the implements of war into the instruments of peace." The book contains a number of essays by former German and American Fulbright scholars on aspects of American life and letters. They include essays on American social thought, Emily Dickinson, Nathaniel Hawthorne, Robert Frost, and regionalism in American literature.

Each year approximately 250 German grantees and an equal number of U.S. grantees participate in this program. Since the establishment of the program, 2,285 Germans and 2,441 Americans have been grantees. A new agreement extends the program to 1969 on a basis of joint financing, which is authorized by the Fulbright-Hays Act of 1961. The Federal Republic is the first country to agree to this new basis.

The program is one of more than 100 exchange programs with other countries administered by the Board of Foreign Scholarships through the Bureau of Educational and Cultural Affairs of the Department of State.

Status of Women

"The President's Commission [on the status of women] was established to examine the needs and rights of American women today and to make recommendations for the elimination of barriers that result in waste, injustice and frustration," said the late Mrs. Eleanor Roosevelt, Commission chairman.

Appointed by President Kennedy in late 1961, the Commission consists of 20 leaders in a wide range of fields including education, labor, religion, politics, research, and public affairs and five Cabinet members and the Chairman of the Civil Service Commission. The Commission works through the following seven committees: Committee on Federal Employment, Committee on Government Contracts, Committee on Protective Labor Legislation, Committee on Civil and Political Rights, Committee on Social Insurance and Taxes, Committee on Home and Community, and Committee on Education. The seven committees are all chaired by a member of the Commission. Both the Department of Health, Education, and Welfare and the Office of Education are represented: Secretary Anthony J. Celebrezze is a member of the Commission, and Edna P. Amidon, Director of the Home Economics Education Branch, is a member of the Committee on Education.

The Commission will release its full report on Oct. 11, 1963. *Higher Education* will carry highlights from the report in a subsequent issue.

Teaching Opportunities in Australia

Higher Education has received notification from the Government of Australia of teaching positions available. Seven positions are offered at the University of Sydney in the following fields: Applied mathematics, biology, history, mathematical statistics, philosophy, physical chemistry, and physics. Three positions are open at the University of Adelaide in agricultural chemistry, mathematics, and mechanical engineering. Interested persons may write to the Cultural Attache at the Australian Embassy, 1700 Massachusetts Avenue, NW., Washington, D.C., for further information.

FOGARTY

FEDERAL PARTICIPATION—from p. 4

of the Cooperative Research Program of the United States Office of Education.

WHILE the National Institutes of Health has as its primary function the support of medical research, it has come to exercise a strong influence on research in educational institutions in our country and, through its support of research, an indirect but strong influence on education as well. When the Congress established the NIH programs, it recognized that effective support for research carried with it the obligation to enlarge the resource base for continued growth. As a consequence the basic authorization for the programs has enabled NIH to provide fellowships, strengthen the structure of graduate education in health-related fields, provide stable support for faculty expansion, and stimulate the construction of health research facilities through a matching grant program. These research and research-related activities have drawn the National Institutes of Health into an ever closer and increasingly fruitful relationship with educational institutions.

Over the years we have become increasingly aware of the capabilities of these Federal programs to support research and at the same time to strengthen rather than weaken the educational enterprise. And over the years it has also become increasingly clear to us that parallel programs must be developed to insure the enlargement of resources for the future and to create and maintain the essentials of support most conducive to productive *basic* research. The NIH programs have been designed in the firm knowledge that at any level in the educational process, the most critical resource is the faculty. The majority of NIH training programs are designed to strengthen faculty and to support research training for graduate students and postdoctoral fellows. We have also sought to strengthen faculty at pivotal junctures in the academic research career. The new program of research career awards, which provides salary support at both the senior and the developmental levels for scientists chosen by their institutions and selected through national competition, is evidence of this concern.

Although this support has come *from* the Federal

Government it has not involved any measure of Federal control. Thus, while NIH has given support for operating costs of specialized research facilities such as clinical research centers, it has also given general research grants to eligible institutions to be used at their discretion in strengthening their research and training capabilities. These NIH programs provide a broad form of support which gives to the institution a great measure of control over the direction and emphasis so that this effort may be consistent with institutional capabilities and objectives.

In summary, I think it is fair to say that the National Institutes of Health Programs have developed an orientation toward the institution as a whole as the programs have expanded in scope and enlarged in dollar volume. They have also acted to strengthen the Nation's structure for basic research and for graduate education in those areas that are related to medical research. I must reemphasize that I feel very strongly that through the programs of the National Institutes of Health the Federal Government has made a positive contribution to the building of the research capability and the teaching capability of the university as well. Further, I feel equally strongly that this contribution has in no way involved Federal control.

THE COOPERATIVE RESEARCH PROGRAM of the United States Office of Education is another important Federal program. As you know, this program provides support for research, surveys, demonstrations, and curriculum development by universities and colleges. This program is, of course, much smaller than the NIH program, but it is having an increasingly important bearing on the research programs of many colleges and universities.

Many of the projects supported under the Cooperative Research Program deal with the resolution of persistent problems in educational practice through research. As a result of one Cooperative Research project at the University of Louisville, for example, it is now possible to increase fourfold the listening comprehension of blind children (from approximately 60 to 240 words per minute). Before this important new discovery, the blind were limited to receiving information at frustratingly slow rates of speed through braille or ordinary voice recordings. Now they can learn at unprecedented rates through the use of compressed speech recordings, which reduce the listening time dramatically. Further research is under way which, educators predict, may soon make it possible to train the blind to digest reading materials at rates comparable to those of persons with unimpaired sight.

Now, while this project represents the involvement of university scholars and scientists in the solution of educational problems at the elementary and secondary school level, a large number of Cooperative Research projects deal with problems in higher education. Nor are these projects restricted to problems of education administration. For example, the recent Cooperative Research enterprise which has come to be known as Project English has established ten curriculum development centers at universities throughout the United States. The function of these centers is to develop new curricular materials for use in English programs at all levels of education. The same approach is being taken in the social sciences, the arts, and the humanities. Certainly, these programs have not been restricted to the areas of engineering, science, medicine, and agriculture. Our hopes for the future of this program include increasing the involvement of scholars from the arts and humanities as well as social and behavioral sciences in programs of research, development, and demonstration.

Let me summarize, finally, the essential conditions which have, I believe, marked our programs of research in institutions of higher education, and which will, I hope, continue to meet the challenge of the coming years.

1. The increasingly participation of the Federal Government in the support of research in universities has led to a strengthening of universities. This strengthening has come in terms of the upgrading and further training of faculty members and graduate students and the provision of research facilities for basic as well as applied research. These conditions can, I believe, only strengthen the positive influence of the university in American society.

2. The increasing participation of the Federal Government in research activities of universities has not resulted in Federal control over universities. The various grant programs sponsored by the Government constantly keep the principle of freedom of scientific and academic inquiry in the forefront of governmental relations with the academic world.

3. While the sciences and engineering continue to receive the major part of the support for sponsored

research, the social sciences and the arts and humanities are of equal concern in many of our programs. We in the Congress appreciate the importance of the social sciences and the arts and humanities in a world grown perilously small. In fact, my concern with the imbalance in Federal programs led to the introduction of a bill to establish an institute for the arts and humanities within the Office of Education.

IN CONCLUSION I want to stress that the growing realization of the need for excellence at all levels of education has permeated the Congress and all other sectors of the Government. We recognize and honor the role of the institution of higher education as the primary source of the research competence to reach this goal. In the words of the report of the President's Scientific Advisory Committee of 1960 in commenting on the relationship of the Federal Government and the university in the area of research—

This partnership is now a fact. It has done much more good than harm. It seems certain to grow in importance unless the American people decide to accept a second rate standing in terms of power, of comfort, of knowledge.

NEW PUBLICATIONS

Government Publications

How To Obtain

(*1*) *Cost Publications: Send request, enclosing remittance (check or money order), to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402*

(*2*) *Free Publications: Request direct from the agency issuing them.*

From the Office of Education

Adult Education—Dimensions and Necessities, by Finis E. Engleman. 1963. 5 p. Free. (OE–13021)

Assignable Area of College and University Buildings, By Facilities Category, Function, and Type of Institution, by E. Eugene Higgins and M. Louise Stewart. Number 16 in College and University Facilities Series April 1963. 4 p. Free. (OE–51004–16)

Bond Sales for Higher Education: 1962, by W. Robert Bokelman and Elmer C. Deering. Number 6 in College and University Finance Series. May 1963. 4 p. Free. (OE–52004–6)

Civil Defense Adult Education Program. 1963. 2 p. Free. (OE–13010–B)

Education Directory, 1962–63, Part 2: Public School Systems, by Louise R. Ayers and Anita V. Turner. 1963. 246 p. $1.00. (OE–20005–63)

Education Directory, 1962–63, Part 4: Education Associations, by Bobbie Doud. 1963. 122 p. 50 cents. (OE–10001–63)

Education Directory, 1962–63, Part 5: Federal Government. 1963. 61 p. 25 cents. (OE–10025–63)

Education for A Changing World of Work: Appendix I, Technical Training in the United States, by Lynn A. Emerson. 1963. 170 p. $1.25. (OE–80022)

Education for A Changing World of Work: Appendix III, by Harold F. Clark, Wilbur Brookover, Sigmund Nosow, Bernice Milburn Moore and Elizabeth E. Noyt. 1963. 91 p. 50 cents. (OE–80026)

Education Joins Housing and Welfare in Coordinated Federal Effort, by James Mauch. 1963. 3 p. Free. (OE–10026)

Educational AM and FM Radio and Educational Television Stations by State and City, by Gertrude G. Broderick. April 1963. 29 p. 25 cents. (OE–34016–63)

Educational Data: Cuba, by Grace I. Krumwiede, Adela R. Freeburger, and Charles C. Hauch. November 1962. 18 p. 15 cents. (OE–14034–67)

The Educational Television Facilities Act of 1962: An Explanation of Public Law 87–447. 1963. 12 p. 10 cent. (OE–34028)

Educational Television Facilities Program: An Instructional Manual. 1963. 22 p. Free. (OE–34029)

Educational Television Transmission Apparatus and Minimum Performance Standards. 1963. 6 p. Free. (OE–34034)

UNIVERSITY MICROFILMS, INC
313 N FIRST STREET
ANN ARBOR, MICH
HE-MAY

UNITED STATES
GOVERNMENT PRINTING OFFICE
DIVISION OF PUBLIC DOCUMENTS
WASHINGTON, D.C. 20402

OFFICIAL BUSINESS

If you do not desire to continue receiving this publication, please CHECK HERE ☐; tear off this label and return it to the address at the left. Your name will then be removed promptly from the appropriate mailing list.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300 (GPO)

Enrollment for Advanced Degrees, Fall 1960, by Wayne E. Tolliver. 1963. 485 p. $2.75. (OE–54019–60)

Motion Picture Production Facilities of Selected Colleges and Universities, by Don G. Williams and Luella V. Snyder. 1963. 345 p. $1.25. (OE–51005)

NDEA and Higher Education. June 1963. 8 p. Free. (OE–50024–6)

Preparation in School and College Personnel Work: Programs and Course Offerings, Summer 1963, Academic Year 1963–64, by Leonard M. Miller and Roland G. Ross. 1963. 196 p. $1.25. (OE–23030)

Project English Newsletter No. 4. May 1963. 4 p. Free. (OE–30006–4)

The Provision of Food Services to Students in Colleges and Universities: 1961–62, by Louis A. D'Amico and Linda L. Wright. Number 4 in College and University Finance Series. April 1963. 5 p. Free. (OE–52004–4)

Report on the National Defense Education Act. Fiscal Years 1961 and 1962: A Summary of Programs Administered by the Office of Education Under Public Law 85–864. 1963. 126 p. $1.00. (OE-10004-62)

Salaries and Fees in Land-Grant Colleges and State Universities, 1962–63, by W. Robert Bokelman, Anna Jane Holbrook, and Lucille Wellman. Number 5 in College and University Finance Series. April 1963. 9 p. Free. (OE–52004–5)

Survey of Educational Media Research in the Far East, by Benjamin C. Duke, ed. New Media for Instruction No. 3. 1963. 181 p. 70 cents. (OE–34025)

Talent and Tomorrow's Teachers: The Honors Approach, by Lanora G. Lewis, J Ned Bryan, and Robert Poppendieck. New Dimensions in Higher Education Number 11. 1963. 83 p. 35 cents. (OE–50036)

Teaching As A Career. Revised May 1963. 32 p. 20 cents. (OE–26014)

The Use of Programed Instruction in U.S. Schools. Report of a Survey of the Use of Programed Instructional Materials in the Public Schools of the United States During the Year 1961–62. 1963. 83 p. 35 cents. (OE–34022)

From Other Government Agencies

National Plan for Ocean Surveys. May 1963. 47 p. Free. The Interagency Committee on Oceanography, Bldg. T-3, Room 1714, 17th and Constitution Avenue NW., Washington, D.C., 20550 (ICO Pamphlet No. 7)

Oceanography: The Ten Years Ahead. June 1963. 58 p. Free. The Interagency Committee on Oceanography, Bldg. T-3, Room 1714, 17th and Constitution Avenue NW., Washington, D.C., 20550 (ICO Pamphlet No. 10)

Profiles of Manpower in Science and Technology. 1963. 36 p. Free. National Science Foundation. Washington, D.C., 20550 (NSF 63–23)

Research and Development in Industry 1960: Final Report on a Survey of R&D Funds and R&D Scientists and Engineers. 1963. 118 p. 65 cents. (NSF 63–7)

U. S. GOVERNMENT PRINTING OFFICE: 1963